CLAIMS

I claim:

1. An embolizing device for insertion into an aneurysm, comprising:

at least one member configured to be sealed within a membrane;

the membrane defining a volume and further defining at least one orifice in a surface of the membrane.

2. The embolizing device of claim 1 wherein the member is attached to a joint.

3. The embolizing device of claim 1 wherein the member numbers at least two.

4. The embolizing device of claim 1 wherein the member is comprised of a shape memory alloy.

5. The embolizing device of claim 4 wherein the shape memory alloy comprises Ni-Ti alloy.

6. The embolizing device of claim 4 wherein the member is adapted to be compressed into a first configuration and then expand into a second configuration.

7. The embolizing device of claim 6 wherein the second configuration comprises a coil.

8. The embolizing device of claim 6 wherein the first configuration comprises a first diameter and the second configuration comprises a greater second diameter.

9. The embolizing device of claim 6 wherein the first configuration comprises a cross-sectional shape selected from the group consisting of circles, ellipses, stars, rectangles, and squares.

10. The embolizing device of claim 6 wherein the second configuration comprises a shape selected from the group consisting of spheres and disks.

11. The embolizing device of claim 6 wherein the member expands from the first configuration into the second configuration upon application of a stimulus to the member.

12. The embolizing device of claim 11 wherein the stimulus is selected from the group consisting of heat, electrical energy, and RF energy.

13. The embolizing device of claim 2 wherein the device is connected via the joint to a delivery catheter for insertion into the aneurysm.

14. The embolizing device of claim 13 wherein the joint is adapted to release the device from the delivery catheter upon an expansion of the member.

15. The embolizing device of claim 2 wherein the joint comprises a detachable mechanical joint.

16. The embolizing device of claim 15 wherein the detachable mechanical joint is selected from the group consisting of hooks, barbs, keyed couplings, and friction-fitted couplings.

17. The embolizing device of claim 2 wherein the joint comprises a detachable electrolytic joint.

18. The embolizing device of claim 17 wherein the electrolytic joint is electrically connected to a voltage source.

19. The embolizing device of claim 13 wherein the volume defined by the membrane is in fluid communication with a proximal end of the delivery catheter.

20. The embolizing device of claim 13 wherein the device is in electrical communication with a proximal end of the delivery catheter.

21. The embolizing device of claim 1 wherein the membrane is distensible.

22. The embolizing device of claim 1 wherein the membrane is comprised of a biocompatible material.

23. The embolizing device of claim 22 wherein the biocompatible material comprises a material selected from the group consisting of silicone, silicone elastomers, latex, polyurethane, and Kraton.

24. The embolizing device of claim 22 wherein the biocompatible material comprises a material which polymerizes upon exposure to light.

25. The embolizing device of claim 24 wherein the light comprises ultraviolet light.

26. The embolizing device of claim 1 wherein a distal end of the member is attached within the volume to an interior surface of the membrane.

27. The embolizing device of claim 26 wherein the membrane is disposed over a catheter distal end and is adapted to slide relative to the catheter distal end such that the member is drawn distally into the volume.

28. The embolizing device of claim 27 wherein the membrane is urged to slide by introduction of a fluid into the volume.

29. The embolizing device of claim 28 wherein the fluid comprises saline or water.

30. The embolizing device of claim 28 wherein the fluid has a pressure which is maintained by a reservoir in communication with the volume.

31. The embolizing device of claim 1 wherein the membrane comprises a wall having a thickness of about 0.0005 to about 0.0015 inches.

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32. The embolizing device of claim 1 wherein the distensible membrane comprises a wall having a thickness of about 0.001 inches.

33. The embolizing device of claim 1 wherein the member contacts an inner surface of the membrane.

34. The embolizing device of claim 1 wherein the member is integral with the membrane.

35. The embolizing device of claim 1 wherein the orifice has a diameter of about 0.0001 to 0.010 inches.

36. The embolizing device of claim 1 wherein the orifice has a diameter of about 0.005 inches.

37. The embolizing device of claim 1 wherein the membrane further defines a plurality of additional orifices in the surface of the membrane.

38. A method of embolization, comprising:

increasing a volume enclosed by a distensible membrane, the distensible membrane defining at least one orifice;

aspirating through the orifice and into the volume a quantity of blood surrounding the distensible membrane; and

coagulating the quantity of blood.

39. The method of claim 38 wherein increasing the volume enclosed by the distensible membrane comprises changing a plurality of resilient members enclosed by the distensible membrane from a first configuration to a second configuration.

40. The method of claim 39 wherein the resilient members are attached to a joint.

41. The method of claim 39 wherein the resilient members comprise a shape memory alloy.

42. The method of claim 41 wherein the shape memory alloy comprises Ni-Ti alloy.

43. The method of claim 39 wherein the second configuration comprises a shape selected from the group consisting of spheres and disks.

44. The method of claim 39 wherein changing the plurality of resilient members comprises applying a stimulus to the resilient members.

45. The method of claim 44 wherein the stimulus is selected from the group consisting of heat, electrical energy, and RF energy.

46. The method of claim 38 wherein the quantity of blood is aspirated through the orifice and into the volume by reducing a pressure within the volume.

47. The method of claim 38 wherein coagulating the quantity of blood comprises allowing the blood to undergo stasis.

48. The method of claim 38 wherein coagulating the quantity of blood comprises applying a stimulus to the quantity of blood.

49. The method of claim 48 wherein the stimulus is selected from the group consisting of chemical factors, mechanical factors, and electrical charges.

50. The method of claim 49 wherein the chemical factors are selected from the group consisting of thrombin, fibrin, and platelet extracts.

51. The method of claim 49 wherein the mechanical factors are selected from the group consisting of fibers and platinum coatings.

52. The method of claim 38 further comprising releasing the distensible membrane from a delivery catheter into an aneurysm.

53. The method of claim 38 wherein increasing the volume enclosed by the distensible membrane comprises inserting at least one resilient member into the volume such that the resilient member changes from a first configuration to a second configuration.

54. The method of claim 53 wherein the second configuration comprises a coil.

55. The method of claim 53 wherein a distal end of the resilient member is attached within the volume to an interior surface of the membrane.

56. The method of claim 55 wherein the resilient member comprises a shape memory alloy.

57. The method of claim 56 wherein the shape memory alloy comprises Ni-Ti alloy.

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